

APPLIED SCIENCE.

PRIZES PROPOSED FOR ASTRONOMICAL WORKS IN 1876.—The French Academy of Sciences announces that in 1876 it will give, besides the Lalande medal, a prize (the Democles prize) for the best memoir on the following subject: "Revise the theory of the satellites of Jupiter; discuss the observations, and deduce the constants which depend upon them, especially determine the velocity of light; finally, construct special tables for each satellite."

ENAMELING ON BRASS AND GERMAN SILVER.—The adhesion of enamel to brass and German silver, it is said, may be most perfectly effected by first engraving or pressing the design to be enamelled into the alloy, and then coating the whole object, or only the depressed design, galvanically with copper. The enamel can be fused upon this surface as usual, and may then be bronzed, or silvered, or treated in any usual way.

THE LALANDE PRIZE.—The Lalande prize of the French Academy is given yearly to the astronomer who shall publish the most useful memoir or make the most important observation. This has been awarded for 1875 to M. Poisson of the Observatory of Toulouse for his astronomical observations, and particularly for his discovery of asteroids. The brothers Henry of Paris, and MM. Rosely and Cognac of Marseilles have received this medal in previous years for the same kind of labors, as has also Prof. Watson of Michigan University.

CHEAT QUININE.—It is reported that the extensive cinchona plantations in British Sikkim have lately begun to furnish an efficient febrifuge, sold at a cheap rate. The resident manager of the plantation at Darjeeling writes to Dr. Hooker that they expect to collect about 90 tons of the bark during this season; that they are making it on the spot into a febrifuge, which is evidently quite as effectual as quinine. They are making from 40 to 50 pounds a week, and expect to increase the quantity, and hope to sell this at about 50 cents an ounce.

PALMIERI'S DRAGMETER.—Prof. Palmiéri has constructed an instrument which he calls a "dragometer." It is intended to determine the character of oils and textures by means of electricity. Among the properties claimed for it are: 1. It will show the quality of olive oil. 2. It will distinguish olive oil from seed oil. 3. It will indicate whether olive oil, although of the best appearance, has been mixed with seed oil. 4. It will show the presence of seed oils. 5. Finally, it will indicate the presence of cotton in silken or woollen textures.

GRAND PRIZE OF MEDICINE AND SURGERY FOR 1875.—The grand prize of medicine and surgery of the Academy of Sciences of Paris has lately been awarded to Dr. Onslow for his researches upon the therapeutic action of electricity, in which he shows the effect of the electrification of the upper cervical ganglion in the inter-scapular circulation, as well as the influence of continuous currents in the atrophy of the optic nerve. He was supported by a very decided majority of the cases. He has also inquired into the influence of the direction of continuous currents on the reflex medullary action, and the employment of electricity as a diagnostic means. His inquiries also extend to the difference of interrupted and of continuous currents upon the economy.

PREVENTION OF BOILER INCURSTATIONS.—Lessen proposes the use of metallic zinc as a preventive of boiler incrustation. Twenty kilograms, introduced into a boiler of 100 horse power, is sufficient for at least three months. The zinc disappears, and whatever is deposited from the water forms no crust, but only a loose mass which can easily be washed away. The mode of action is not yet explained, but Mr. Lessen supposes electrical force to be involved. A galvanic couple may be formed by the zinc with the metal of the boiler, so that little water would be decomposed. Thus a film of zinc would be produced and continually renewed on the surface of the iron, preventing the adhesion of any deposit.

BLEACHING SPONGES.—Sponges are said to be bleached by the following process, without the emission of injurious or unpleasant gases: They are first covered with hydrochloric acid, for the removal of calcareous matter, and after being washed with water, are immersed for five to ten minutes in a solution of 1 part of potassium or sodium permanganate to 45 of water, in which they acquire a dark-brown color, which disappears on immersing them for two to four minutes in a solution of 1 part of oxalic acid in 20 parts of water, with the addition of a little sulphuric acid. They are then thoroughly washed with water. The brown color acquired may also be removed without injury by repeated immersions for several minutes in very dilute sulphuric acids after transplanting.

principles, one of which is perfectly equal to indigoine. This is obtained by exposing the coloring principle of the mallow to the air until it assumes a yellow tint; then washing it with crystalline acetic acid, which dissolves the tint. Water is then added to the acidic solution, and the whole shaken up with chloroform, which dissolves the purple. The ether solution leaves behind, after evaporation, the residue, which is violet. Washed in ether, this is deprived of the red principle contained in it, and the remainder is redissolved in alcohol. It is well known that the ancients preferred the secretion of the *Murex brandaris* to that of the *M. trunculus*. It is found that the secretions of these two species are by no means the same, and that their colors from solution are different. In the secretion of *M. brandaris* is a principle that is to say, it does not become violet, but is converted by the depolarization of light, while that of *M. trunculus* becomes violet by contact with the air. In reference to the studies of the coloring matter found in the *M. trunculus*, they remark that they had found chlorophyll in other mollusks, identical with the coloring matter of vegetal.

PURIFICATION OF FIXED VEGETABLE OILS.—Fixed vegetable oils are purified much more perfectly and cheaply than used by a process practiced in England, in which the agitation of the oil, during purification, is accomplished by a current of air forced into it through a system of perforated tubes entering the bottom of the vessel, instead of by means of revolving paddles. The sulphur oil is added to the oil as usual, cautiously during the agitation, and oil is then added, effected by this method, the carbonization of the alluminous and other impurities is more complete.

The acid is removed from the purified oil, as usual, and any residue of water by means of steam heat.

RAPIDITY OF GROWTH IN CERTAIN FISHES.—Mr. Mitchell, in a communication to *Nature*, presents some remarkable facts in regard to the rapidity of growth of fishes. Referring to a species of carp, called by the natives *Katish*, he states that this is a species which does not breed in fresh water, but that the natives are in the habit of introducing the young into ponds, etc., where they thrive very satisfactorily. According to his account a tank 65 feet long, 58 feet broad, and 13 feet deep, was dug within the premises of Garden Reach, in May, 1875, and a number of the *Katish* fry, from half an inch to an inch in length were introduced about the end of July. On the 22d of September the tank was swum with nets to catch one or two fish of the size species that had been accidentally introduced with the others. In the net were taken several dozens of carp referred to, one of which was less than a week old. Other experiments were made, and the results were similar, in addition to the natural vegetation of the pond, of the raising of rice and other substances thrown into the pond by the natives.

FATTENING OF OYSTERS.—Prof. Fraser, in a communication to the Academy of Natural Sciences, in speaking on the general subject of Dialysis, suggested its application to the fattening of oysters, remarking that oysters brought to a short time in fresher water than that from which they were taken, resulting in an increase of size or plumpness. This, however, only lasts for a few days. At the end of this time the oysters become lean again, having lost the plump appearance. Dr. Fraser remarks that, although sometimes corn meal or other substances are placed upon the oysters during this operation, it can have no material effect in increasing the amount of the flesh, but that the increase in size is due entirely to the absorption of moisture. The tissues of oysters when first taken are saturated with the ocean brine, and when removed to fresh water, or that which is less salt, the excretion of fluid and waste products continues, until the oysters are again saturated with the ocean brine. The result of this is to cause the oyster to swell, with no increase of its virtues. When the water in which the oyster is immersed is too fresh it loses its flavor. Prof. Fraser suggests that by immersing the oysters for some days in concentrated brine and then removing them to sea water, the plumpness would be increased without the loss of weight. Other experiments were made, with the result that the oysters increase in flesh or not would be left to 100 or more from a given locality on the sea coast and drying them at 22° Fahr. Fresh and ascertaining their average weight, and then repeating the process for the same number of oysters after transplanting.

RELIGIOUS INTELLIGENCE.

Mr. Morley, M. P., of England has given the Young Men's Christian Association of the United States and Canada, delegates were present from 30 States, provinces, districts, and Territories. The number of delegates was 350, representing 117 associations. Miss Stirling, Jr., of Boston was elected President. The annual report of the Executive Committee embodied reports from 789 associations. There has been a clear gain of \$128,843 in association property. Forty-four associations are accumulating building funds. The total value of property reported is \$2,055,285. One hundred and five general secretaries and agents of the States International Committee make association duty their life work. There is an urgent call for more men of this description. Two Provincial and 18 State Conventions were held during the past year. The National "Board" of German-speaking associations met twice during the year—in Toledo and once in Newark, N. J. Mr. Lane Sheaf has spent five months in the visitation of railroad workmen, of whom there are estimated to be several hundred thousand in the United States. Messrs. Hall and Clegg spent three months in the South, and held 203 meetings. The sum of \$11,560 was sent by the International Executive Board to the Southern Association. Delegates were sent to the Conference of the Association of all lands, which was held in Hamburg, Aug. 12, 1875, who presented a full report of the work of American associations. Mr. H. C. Adams, formerly of New York, Member Christian Association of London—was introduced and most heartily welcomed.

LITERARY NOTES.

Mr. R. H. Horne is bringing out a tragedy, "George the Seventh."

The July *Contemporary Review* has a paper by Grant on "The Prince of Europe."

Miss Yonge's "Eighteen Centuries of Beginnings" is in the July "gentleman's Magazine."

The new story for girls, "Mrs. Hard's Novel," by Miss Ella Farman, to be published at once by D. Lothrop, Boston.

Prof. Paolo Mantegazza has just published in Florence "A kind of anthropological romance, under the title of "Il Diavolo."

A tragedy founded on the story of the Comte de St. Germain, who died at Monaco upon the 11th of June, 1711, will be written by Dr. C. L. Babcock, Dr. Sylvester Woodbridge returns. Dr. Babcock has been the corresponding editor of "The Herald and Presbyter of Cincinnati."

The Reformed Episcopal Council, at its meeting in Ottawa, Canada, appointed Bishop Criddle delegate to the Free Church of England, and the Rev. John Todd and Judge Hughes delegates to the Episcopal Conference of Canada.

The United Presbyterian Mission Board, at their July meeting, resolved, in view of their diminished receipts, not to send the Rev. Messrs. Harvey and Johnson, with their families, back to Egypt. The indebtedness of the Board is now \$18,000. The average expenses are \$5,000 monthly, and the monthly receipts during summer not over \$1,000.

The sum of £1,400 has been paid by the inhabitants of Anatolia, Asia Minor, to the Board which is in charge of the funds for the proposed Christian college in that place. The region of country surrounding Anatolia contains a population of 5,000,000 persons. The commonly spoken language is the Turkish, which will be the language of the college.

In the German Reformed churches the centennial services which related mainly to local history will throw clear light upon the early settlement of important centers in the Middle States and Maryland. The Germans of the Reformed faith settled in Frederick, Md., as early as 1740; in Eastern Penn., in 1745, and in Reading at an early period of the last century.

The deposition of Dr. Melchers, Archbishop of Cologne, makes the number of Prussian sees now vacant seven. Of these vacancies five have been caused by death and two by death. The deposed prelates are Cardinal Ledochowski, Dr. Michels, Dr. Funck, Prince Bishop of Breslau. Dr. Brinkmann of Münster, and Dr. Martin of Paderborn. The other two vacant sees are Fulda and Treves.

Arrangements are completed for the Baptist Sunday-school Conference and Tent Meeting" at seaside Park, Toms River, New-Jersey, Aug. 24. The *National Baptist* announces that "the morning of each day will be devoted to bathing, boating, crabbing, sailing, rowing, or other recreations." In the afternoon and evening of each day the Conference will be held in the Tabernacle, 10th and Franklin Streets, New-Jersey. The Fair, which is to be opened on the 24th, will be held in the Tabernacle.

Dr. Joe, P. Thompson's six lectures on "Catholicism," delivered at several European cities, are to be published in book form in German and English.

Among the papers in the July *Gentleman's Magazine* are "The Carpenter's Policy," by George Brown, and "The Adventurous Shipwreck," by Herbert T. T. Tuck.

Mr. Gladstone contributes to the July *Church Quarterly* a paper on the L. of Dr. Norman Macaulay. An article from Mr. Lord Macaulay will soon appear in the *Gentleman's Magazine*.

Mr. Justin McCarthy begins his new story, "Love in Silence," in the July "gentleman's Magazine."

The new story for girls, "Mrs. Hard's Novel," by Miss Ella Farman, to be published at once by D. Lothrop, Boston.

Prof. Paolo Mantegazza has just published in Florence "A kind of anthropological romance, under the title of "Il Diavolo."

A tragedy founded on the story of the Comte de St. Germain, who died at Monaco upon the 11th of June, 1711, will be written by Dr. C. L. Babcock, Dr. Sylvester Woodbridge returns. Dr. Babcock has been the corresponding editor of "The Herald and Presbyter of Cincinnati."

The deposition of Dr. Melchers, Archbishop of Cologne, makes the number of Prussian sees now vacant seven. Of these vacancies five have been caused by death and two by death. The deposed prelates are Cardinal Ledochowski, Dr. Michels, Dr. Funck, Prince Bishop of Breslau. Dr. Brinkmann of Münster, and Dr. Martin of Paderborn. The other two vacant sees are Fulda and Treves.

A translation of Col. Higginson's "Young Folks' History of the United States" has been added by Mr. Ainsworth, Worcester, to his American-German publications, a centennial volume.

A volume of verse for the younger folks, "A Centenary Calendar," will soon be published by Harper & Brothers, as a "Centenary calendar." Most of the poems are to be classed as "Academy songs," which are said to be clever imitations of the pictures in the *Illustrated Books of the Week*.

At the Assembly of the Society of St. Vincent de Paul, held at Philadelphia, important statistics in relation to the country were presented. The organization of the Society in the United States was founded at St. Louis in 1845 by Bishop Taney. There are now 250 conferences in the country; in this city there are 34, with an aggregate of 368 members. The Society dedicated in this city, during 1875, \$50,591 among the poor, in food, fuel, and clothing; made \$3,014 visits, and performed 1225 baptisms for persons of employment.

At the semi-centennial anniversary of the *Academy Notes*, a London publication has issued a series of "Academy songs," which are said to be clever imitations of the pictures in the *Illustrated Books of the Week*.

With needless blushing of the thermometer, Messrs. Barrial and Salveter, in a memorial presented to the Academy of Sciences of Paris, refer to the fact that a large proportion of the wool imported from Australia and South America contains greater or less percentages of vegetable matter mixed with it, which is injurious to its quality, and which usually resists the mechanical means of separation. An important problem, therefore, has been the destruction and elimination of the vegetable fiber by agencies that do not injure the wool. In summing up the results of their experiments, and considering those of others working in the same field, Barrial and Salveter remark that the cellulose and woody fiber can be decomposed under the action of several chemical agents, provided that the tissue, dried in the oven after soaking, is then raised in a stove to a temperature of about 350° Fahr. These agencies are sulphuric acid, hydrochloric acid, zinc, or tin, or of copper; nitrates of copper, of magnesia, and of iron; sulphates of tin and zinc, of iron, of tin, and of iron; and of iron.

COLORING MATTER OF THE MUREX SHELL.—Messrs. de Neuf state that, as the result of careful investigation into the coloring matter of certain mollusks, the *murex trunculus* contains two coloring

principles, one of which is perfectly equal to indigoine. This is obtained by exposing the coloring principle of the mallow to the air until it assumes a yellow tint; then washing it with crystalline acetic acid, which dissolves the tint. Water is then added to the acidic solution, and the whole shaken up with chloroform, which dissolves the purple. The ether solution leaves behind, after evaporation, the residue, which is violet. Washed in ether, this is deprived of the red principle contained in it, and the remainder is redissolved in alcohol. It is well known that the ancients preferred the secretion of the *Murex brandaris* to that of the *M. trunculus*. It is found that the secretions of these two species are by no means the same, and that their colors from solution are different. In the secretion of *M. brandaris* is a principle that is to say, it does not become violet, but is converted by the depolarization of light, while that of *M. trunculus* becomes violet by contact with the air. In reference to the studies of the coloring matter found in the *M. trunculus*, they remark that they had found chlorophyll in other mollusks, identical with the coloring matter of vegetal.

THE MARINE MARSHAL'S ILLUSTRATED MANUAL. By W. H. Fitzgerald. 12mo. pp. 325.

THE CHIROPRACTIC AND LAW OF WILLS. By John Proctor, LL. B. 12mo. pp. 218. (Summer, White & Co., San Francisco.)

NEW YORK. By James B. Hademann. Svo. pp. 131. Paper. (W. E. Gill & Co., Boston.)

THE SCIENCE OF ARITHMETIC. By Edward Olney. 12mo. pp. 294. Sheldon & Co.

LAWS RELATING TO RELIGIOUS CORPORATIONS. By the Rev. Samuel Jordan, LL. D. 12mo. pp. 273. (Gilliland, Phillips & Co., Boston.)

MECHANICS. By the Rev. E. M. Wood. Ph. D. 12mo. pp. 414. (The Same.)

CHURCH TREATISE ON PLURALISM. Corrected and Edited, by Henry Greening. 12mo. pp. 160. (F. P. Perkins, LL. D. 2 vols. Svo. pp. 1036-1871. (G. C. Merriam, Springfield, Mass.)

HELLENIC PERIOD. By Thos. Latimer. 12mo. pp. 206. Paper. (Loesing, Boston.)

GIANNETTO. By Lady Margaret Maudslay. 12mo. pp. 196. Paper. (Loesing, Boston.)

THE HISTORY OF ENGLAND. By John Bright. 12mo. pp. 196. Paper. (Loesing, Boston.)

THE HISTORY OF THE UNITED STATES. By David Starr Jordan, M. S. M. D. 12mo. pp. 312. (Loesing, McGraw & Co., Chicago.)

HISTORICAL LESSONS OF AMERICA. By George W. Curtis. 12mo. pp. 192.

THE HISTORY OF THE UNITED STATES OF AMERICA. By the Rev. Samuel Jordan, LL. D. 12mo. pp. 206.

THE HISTORY OF THE UNITED STATES. By the Rev. Samuel Jordan, LL. D. 12mo. pp. 206.

THE HISTORY OF THE UNITED STATES. By the Rev. Samuel Jordan, LL. D. 12mo. pp. 206.

THE HISTORY OF THE UNITED STATES. By the Rev. Samuel Jordan, LL. D. 12mo. pp. 206.

THE HISTORY OF THE UNITED STATES. By the Rev. Samuel Jordan, LL. D. 12mo. pp. 206.

THE HISTORY OF THE UNITED STATES. By the Rev. Samuel Jordan, LL. D. 12mo. pp. 206.

THE HISTORY OF THE UNITED STATES. By the Rev. Samuel Jordan, LL. D. 12mo. pp. 206.

THE HISTORY OF THE UNITED STATES. By the Rev. Samuel Jordan, LL. D. 12mo. pp. 206.

THE HISTORY OF THE UNITED STATES. By the Rev. Samuel Jordan, LL. D. 12mo. pp. 206.

THE HISTORY OF THE UNITED STATES. By the Rev. Samuel Jordan, LL. D. 12mo. pp. 206.

THE HISTORY OF THE UNITED STATES. By the Rev. Samuel Jordan, LL. D. 12mo. pp. 206.

THE HISTORY OF THE UNITED STATES. By the Rev. Samuel Jordan, LL. D. 12mo. pp. 206.

THE HISTORY OF THE UNITED STATES. By the Rev. Samuel Jordan, LL. D. 12mo. pp. 2